

## Claims

What is claimed is:

1. An apparatus for coating implantable devices, comprising:
  - a) a chamber in which a coating composition comprising a coating solvent can be applied to an implantable device;
  - b) a pressure controller for adjusting the pressure of the chamber during the coating process to other than ambient pressure,wherein other than ambient pressure is greater than 760 torr if the coating solvent is non-volatile, and alternatively, wherein other than ambient pressure is less than 760 torr if the coating solvent is volatile.
2. The apparatus of Claim 1 additionally including an applicator for spraying a composition at the device.
3. The apparatus of Claim 1 additionally including a support assembly for holding the device during the coating process.
4. The apparatus of Claim 1 additionally including means for rotating the device during the coating process.
5. The apparatus of Claim 1 additionally including means for moving the device in a linear direction during the coating process.
6. The apparatus of Claim 1 additionally including means for creating convection flow within the chamber.
7. The apparatus of Claim 1 wherein the coating process comprises the application of the composition to the device and wherein the composition further comprises a polymer and optionally a therapeutic substance.

8. The apparatus of Claim 1 additionally including a temperature controller for adjusting the temperature of the chamber.
9. An apparatus for coating implantable devices, comprising:
  - a) a chamber in which a coating composition comprising a coating solvent can be applied to an implantable device;
  - b) a pressure controller for adjusting the pressure of the chamber during the coating process to other than ambient pressure,

wherein other than ambient pressure is greater than 760 torr if the coating solvent evaporation rate is to be decreased, and alternatively, wherein other than ambient pressure is less than 760 torr if the coating solvent evaporation rate is to be increased.

10. The apparatus of Claim 9 additionally including an applicator for spraying the composition at the device.
11. The apparatus of Claim 9 additionally including a support assembly for holding the device during the coating process.
12. The apparatus of Claim 9 additionally including means for rotating the device during the coating process.
13. The apparatus of Claim 9 additionally including means for moving the device in a linear direction during the coating process.
14. The apparatus of Claim 9 additionally including means for creating convection flow within the chamber.
15. The apparatus of Claim 9 wherein the coating process comprises the application of the composition to the device and wherein the composition further comprises a polymer and optionally a therapeutic substance.

16. The apparatus of Claim 9 additionally including a temperature controller for adjusting the temperature of the chamber.
17. An apparatus for coating implantable devices, comprising:
  - a) a chamber in which a coating composition comprising a coating solvent can be applied to an implantable device;
  - b) a pressure controller for selecting the pressure of the chamber during the coating process to a pressure,wherein pressure is other than ambient pressure and is based on the vapor pressure of the coating solvent.
18. The apparatus of Claim 17 additionally including an applicator for spraying the composition at the device.
19. The apparatus of Claim 17 additionally including a support assembly for holding the device during the coating process.
20. The apparatus of Claim 17 additionally including means for rotating the device during the coating process.
21. The apparatus of Claim 17 additionally including means for moving the device in a linear direction during the coating process.
22. The apparatus of Claim 17 additionally including means for creating convection flow within the chamber.
23. The apparatus of Claim 17 wherein the coating process comprises the application of the composition to the device and wherein the composition further comprises a polymer and optionally a therapeutic substance.
24. The apparatus of Claim 17 additionally including a temperature controller for adjusting the temperature of the chamber.